

REMARKS

This amendment is provided in response to the Office Action mailed November 25, 2003. Applicant notes with appreciation the potential allowability of claim 7 which has been written in independent form containing the limitations of the base claim and intervening claim 2. By way of this amendment, claims 1-4, 6, 7 and 16-21 are pending in the application. Support for the claim amendments is found within the claims as originally filed and as such, it is submitted that no new matter has been added by way of these amendments. Support for the new claims is found within the claims as originally filed as well as the specification including page 6, line 8. As such, it is submitted that no new matter has been added by way of this amendment.

The drawings filed with the application have been deemed to be inadequate. Based on the statements made in Paper No. 8, page 2, it appears that the Examiner has not had the benefit of the formal drawings made of record on December 21, 2001. As all the drawings are resubmitted with this amendment, it is now believed that the drawings are in acceptable form. Claims 1-6 were rejected under 35 U.S.C. §103(a) over Mangyo et al. (U.S. 5,252,039) in view of Oda et al. (U.S. 4,798,493) in view of Japanese Patent 57-79277.

Remarks Directed to Claim Rejection Under 35 U.S.C. §103(a)

Claim 1 recites in amended form a “ceramic high pressure piston in contact with a ceramic sleeve operating independent of a lubricating liquid; a drive piston mounted to said ceramic high pressure piston.” (Claim 1, lines 2-4).

Mangyo et al. is cited as teaching all the claimed subject matter except “the drive piston mounted to the ceramic high pressure piston such that the movement of the drive piston simultaneously moves the ceramic high pressure piston further comprising a compliant coupling between said ceramic high pressure piston and said drive piston.” (Paper No. 8, page 3). Oda et

al. in Figure 5 is cited for teaching a drive piston 25 mounting a ceramic high pressure piston 21 and a compliant coupling. Japanese Patent 57-79277 is cited to bolster the prior art reference combination with respect to a reciprocating compressor where a ceramic high pressure piston contacts a ceramic sleeve.

Applicant submits that Mangyo et al. teaches away from the reference combination with respect to the claim limitation of a ceramic piston engaging a ceramic sleeve independent of a lubricating liquid. In this regard, Mangyo in the Background of the Invention (columns 1-2) teaches that conventional compressors suffered from insufficient lubrication problems that limited their usefulness. Mangyo et al. is submitted to teach that not only is lubrication essential, but lubrication also is performed according to Mangyo et al. because it efficiently reduces operating noise and prolongs bearing life. (Column 6, lines 6-9). As oil necessarily bathes the connecting rod 34, and the sidewalls of the piston 35, Applicant submits that the cylinder bore 36 necessarily is exposed to oil simultaneously in contact with the cylinder bore 36 and the cylinder 35.

To replace the cylinder 35 of Mangyo et al. with a ceramic piston face according to Oda et al. and a ceramic cylinder bore according to Japanese Patent 57-79277 as suggested by the Examiner is contrary to the claim limitation originally in claim 5, and now in claim 1. It is well established law that an obviousness rejection cannot stand when the reference combination is contrary to the teaching of one of the references making up the combination.

In light of the above amendments and remarks, it is now believed that claim 1 is in allowable form over the prior art of record.

With respect to claim 2, it is respectfully submitted that the prior art reference combination fails to teach a thermal immersion tank having a liquid heat transfer fluid. To emphasize this fact, claim 2 has been amended not to narrow the scope of the claim but to

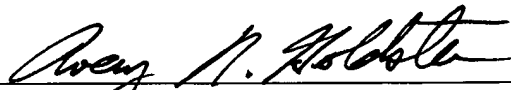
emphasize that the immersion tank surrounds the inventive gas compressor and contains a liquid heat transfer fluid therein. In contrast to the subject matter of claim 2, Mangyo et al. according to the Examiner contains oil which has some value as a heat transfer fluid yet is internal to the compressor and not external to the compressor but contained within a surrounding immersion tank in which the compressor resides. As such, claim 2 and new claim 22 are believed to be nonobvious over the prior art reference combination as detailed above.

Applicant submits that claims 1-4 and 6 are now in allowable form. Withdrawal of the rejection as to claims 1-4 and 6 under 35 U.S.C. §103(a) over Mangyo et al. in view of Oda et al. and Japanese Patent 57-79277 is solicited.

Summary

Claims 1-4, 6-7 and 16-22 are the claims pending in the application. The potential allowability of claim 7 is noted with appreciation. Each of the claims is now believed to be in allowable form and directed to patentable subject matter. Allowance of the claims and the passing of this application to issuance are solicited. If the Examiner finds to the contrary, or has any suggestion as to the format of the claims, he is respectfully requested to contact the undersigned attorney in charge of this application to resolve any remaining issues.

Respectfully submitted,



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